CLAIMS

1. An extreme ultraviolet light source target characterized in that a laser absorption region and an extreme ultraviolet light emission region are set close in space by adjusting a density of the extreme ultraviolet light source target.

2. The extreme ultraviolet light source target according to claim 1, characterized in that the laser absorption region and the extreme ultraviolet light emission region overlap in space.

3. The extreme ultraviolet light source target according to claim 1 or 2, characterized in that it is made of heavy metal or heavy-metal compound, and a density of the heavy metal or the heavy-metal compound is 0.5% to 80% of a crystal density of the heavy metal or the heavy-metal compound.

4. The extreme ultraviolet light source target according to claim 3, characterized in that the heavy metal is one among Ge, Zr, Mo, Ag, Sn, La, Gd and W, or the heavy-metal compound is one among Ge, Zr, Mo, Ag, Sn, La, Gd and W.

5. The extreme ultraviolet light source target according to clam 4, characterized in that the heavy metal is Sn or the heavy-metal compound is SnO_2.

6. The extreme ultraviolet light source target according to one of claims 1 to 5, characterized in that the target is shaped a tape.

7. The extreme ultraviolet light source target according to claim 1 or 2, characterized in that it is made of frost of gas target having a density 0.5 to 80% that of a solid of the gas target.

8. A method of generating extreme ultraviolet light, characterized in that the extreme ultraviolet light source target according to one of claims 1 to 7 is irradiated with a laser beam.

9. An extreme ultraviolet light source, characterized by comprising the extreme ultraviolet light source target according to one of claims 1 to 7 and a laser light source irradiating the target with a laser beam.

10. The extreme ultraviolet light source according to claim 9, characterized in that the laser light source is a light source which emits a fundamental wave or a harmonic wave of YAG laser or excimer laser.

11. An extreme ultraviolet light source comprising:

a hopper having an outlet from which frost can be discharged;

a freezing machine for cooling the hopper;

a heater which can heat a wall of the hopper intermittently; and

a vacuum chamber for keeping around the hopper in a vacuum state and having a first window for guiding a laser beam from the outside to the vicinity of the outlet, and a second window for taking out extreme ultraviolet light.

12. The extreme ultraviolet light source according to claim 11, characterized

in that the heater works with the principle of high-frequency discharge.

13. The extreme ultraviolet light source according to claim 12, characterized in that a plurality of discharge electrodes of the heater are provided in an outer circumference of the hopper.

14. The extreme ultraviolet light source according to one of claims 11 to 13, characterized in that it further comprises a bladed wheel having a plurality of blades radiating outward and rotatably fixed to the hopper just above the outlet, and in that the hopper is formed cylindrically just above the outlet so as to surround the bladed wheel.

15. A method of manufacturing an extreme ultraviolet light source target, characterized in that a density of the heavy-metal oxide of the target is made to be 0.5% to 80% of a crystal density of a heavy-metal oxide,

with a process comprising:

a step of manufacturing a gel containing a heavy-metal oxide by solving a heavy-metal chloride in dehydrated alcohol and mixing this with water; and

a step of drying the gel.

16. A method of manufacturing an extreme ultraviolet light source target, characterized in that a density of the heavy-metal oxide of the target is made to be 0.5% to 80% of a density of a heavy-metal oxide crystal

with a process comprising:

a step of manufacturing a gel containing a heavy-metal oxide by solving a heavy-metal chloride in dehydrated alcohol and mixing this with water; and

a step of forming a target by mixing the gel with nanoparticles of polystyrene and heating it to a temperature which is 240°C or more but below a decomposition temperature of the heavy-metal oxide.

17. The method of manufacturing of the extreme ultraviolet light source target according to claim 15 or 16, characterized in that the heavy-metal chloride is $SnCl_4$.